Pharmacogenetics Pain Management and Psychotropic Panel

**Test Code:** MPG03  
**Turnaround time:** 10 days  
**CPT Codes:** 81225 x1, 81226 x1, 81227 x1, 81230 x1, 81231 x1, 81240 x1, 81241 x1

### Condition Description

Pharmacogenomics (or pharmacogenetics), abbreviated PGx, is the study of how genes affect a person’s response to certain drugs. PGx testing uses genetic information to predict how individual patients will metabolize some prescription medications. This prediction allows an effective dose to be tailored to a person’s genetic makeup, helping to prevent adverse drug reactions. Pharmacogenetics Extended Test targets variants to genotype for various haplotypes among the following 10 genes.

**Genes and Alleles Tested:**  
**ANKK1**  
**DRD2** **DRD2:Taqa1;**  
**COMT** NM_000754.3:c.472G>A(p.V158M); rs4680  
**CYP3A4** *1B, *2, *3, *12, *17; *22;  
**OPRM1** NM_000914.3:c.118A>G(p.N40D); rs1799971

Note that “*” (read as “star”) denotes the common name of a haplotype (or combination of alleles within a gene on the same chromosome).

### Indications

Individuals who meet the defined clinical criteria for being prescribed specific drugs for psychotropic medications and pain management.

### Methodology

The test uses custom manufactured TaqMan® drug metabolism and SNP genotyping assays in 384-well format that are run on the QuantStudio™ 6 Flex platform. The complete test consists of two components: SNP genotyping and copy number quantification. The SNP genotyping component consists of 64 TaqMan® SNP Assays for 63 loci, which include single base and short insertion/deletion polymorphisms. The copy number component consists of one TaqMan® Copy Number assay for the CYP2D6 gene.

### Specimen Requirements

#### Type: Saliva

**Specimen Requirements:**  
Oragene™ Saliva Collection Kit  
Orangene™ Saliva Collection Kit used according to manufacturer instructions. Please contact EGL for a Saliva Collection Kit for patients that cannot provide a blood sample.

**Specimen Collection and Shipping:**  
Please do not refrigerate or freeze saliva sample. Please store and ship at room temperature.

#### Type: DNA, Isolated

**Specimen Requirements:**  
Microtainer 8µg  
Isolation using the Perkin Elmer™Chemagen™ Automated Extraction method or Qiagen™ Puregene kit for DNA extraction is recommended.

**Specimen Collection and Shipping:**  
Refrigerate until time of shipment in 100 ng/µL in TE buffer. Ship sample at room temperature with overnight delivery.

#### Type: Whole Blood (EDTA)

**Specimen Requirements:**  
EDTA (Purple Top)  
Infants and Young Children (2 years of age to 10 years old): 3-5 ml  
Older Children & Adults: 5-10 ml  
Autopsy: 2-3 ml unclotted cord or cardiac blood

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Specimen Collection and Shipping:
Ship sample at room temperature for receipt at EGL within 24 hours of collection. Do not refrigerate or freeze.

Related Tests

Pharmacogenetics Expanded Panel (MPG01)